ABSTRACT

A method of coupling optical waveguides comprising the steps of: (i) providing at least one pair of waveguides located such that (a) light radiation propagating through one of the waveguides will be at least partially coupled to a corresponding waveguide and, (b) these waveguides are separated by a gap of about 2μm to about 500μm long; the waveguides having positive dn/dT; (ii) filling the gap with a photo-polymerizable composition, the composition having dn/dT of $-2x10^{-4}$/C to $-4x10^{-4}$/C; (iii) providing simultaneous photo-radiation through said waveguides, wherein the photo-radiation photo-polymerizes the composition, thereby (a) creating a first region bridging between the waveguides, the first region having a first index of refraction, and (b) a second region encapsulating the first region, the second region having a second index of refraction, such that said first index of refraction of the first region is at least 0.1% higher than the second index of refraction; and (iv) curing the remaining composition, while retaining an index difference of at least 0.1% between the first region and the second region.